United States Department of the Interior
National Park Service

National Register of Historic Places Multiple Property Documentation Form

This form is used for documenting property groups relating to one or several historic contexts. See instructions in National Register Bulletin *How to Complete the Multiple Property Documentation Form* (formerly 16B). Complete each item by entering the requested information.

___X____ New Submission _____ Amended Submission

A. Name of Multiple Property Listing

L-4 Fire Lookouts on the Lolo National Forest, 1932-1967

B. Associated Historic Contexts

(Name each associated historic context, identifying theme, geographical area, and chronological period for each.)

The Role of the L-4 Lookout House in the development of the US Forest Service Region 1's Fire Detection System

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D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR 60 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation.

_____ _____ _____
Signature of certifying official Title Date

_____
State or Federal Agency or Tribal government

I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

_____ _____
Signature of the Keeper Date of Action

United States Department of the Interior
National Park Service

L-4 Lookouts on the Lolo National Forest — Montana
Name of Multiple Property Listing — State

Table of Contents for Written Narrative

Create a Table of Contents and list the page numbers for each of these sections in the space below.
Provide narrative explanations for each of these sections on continuation sheets. In the header of each section, cite the letter, page number, and name of the multiple property listing. Refer to *How to Complete the Multiple Property Documentation Form* for additional guidance.

E. Statement of Historic Contexts

The role of the L-4 Lookout House in the development of the US Forest Service Region 1's Fire Detection System

From the passage of the 1891 Forest Reserve Act to the present, resource protection has been one of the primary goals of the US Forest Service.[1] As stated in the first, 1905 edition of the Forest Service Use Book: "Officers of the Forest Service, especially forest rangers, have no duty more important than protecting the reserves from forest fires."[2] Initial efforts to control wild fire concentrated on making forested areas more accessible through trail building and improved telephone communication systems. Forest Rangers conducted patrols of the backcountry mostly on horseback, identifying high elevation lookout points that provided panoramic views of the surrounding country.

As with most Forest Service programs, the early and chronic shortage of funding impacted the fire protection system. After the great fire of 1910 destroyed vast swaths of forest lands in Montana and Idaho, the service began a concerted effort to improve its protection program. Henry S. Graves, dean of the Yale Forestry School, headed the US Forest Service for the decade immediately succeeding the 1910 fire. During his tenure, Graves' greatest challenge was to wring adequate annual appropriations from Congress to keep his agency viable. Five years of experimentation in fire control and preliminary administrative site surveys by the Forest Service had prepared the ground for a concerted program of management planning under the direction of Chief Forester Graves. Working with stringent budgets imposed by a skeptical Congress, Graves devised a system for management planning that was oriented around each national forest.

Graves required forest supervisors to prepare three types of plans. The preliminary forest plan provided an overview of long range objectives. The working forest plan was a more finished rendition of the preliminary plan, and would be the main management planning tool. The annual forest plan provided budget estimates for improvement projects in the forthcoming fiscal year. Each plan had to cover 1) general administration, 2) silviculture management, 3) grazing management, 4) permanent improvements, 5) forest protection, and 6) uses of the forest, such as settlements, special uses, water power, and administrative sites. Under permanent improvements, the plan had to address all classes of improvements relating to protection, administration, and development of the forest. These included trails, roads, bridges, telephone lines, signal systems, permanent and temporary quarters, pasture fences, lookouts, fire lines, fire tool caches, stock driveways, and anything else that was necessary for the use of the range or to improve timber access. The chief forester wanted cost estimates

[1] The Forest Reserve Act of 1891 authorized the president of the United States to set apart and reserve forested lands for the public interest. These "forest reserves," were to be managed by the General Land Office under the Department of the Interior. In 1897, Congress passed the Organic Administrative Act, which stipulated that the purpose of forest reserves was to protect watersheds and lands that were chiefly valuable for sustained timber production. The 1905 Transfer Act, moved management of the forest reserves to the Bureau of Forestry within the Department of Agriculture. Five months after passage of the Transfer Act, the Bureau of Forestry was formally renamed the U. S. Forest Service.

[2] United States Department of Agriculture, Forest Service, *The Use of the National Forest Reserves: Regulations and Instructions* (Washington: Government Printing Office, 1905). The Use Book was a pocket-sized guide containing a summary of forest service regulations designed to be used by agency employees and by the public.

and maps. In addition, he requested a map of the whole forest showing all administrative sites either "selected" or "proposed," together with patrol and lookout stations, tree nurseries, and sites needed for logging operations.[3]

Graves allotted funds to each forest for permanent improvements based upon the forest supervisors' plans and cost estimates. He authorized forest supervisors to transfer funds from one approved project to another, as long as it did not entail the abandonment of a project. Finally, the chief forester apportioned five percent of the total improvement allotment to the regional offices, as a contingent fund for completing projects that were experiencing cost overruns.[4]

The Chief Forester explained the necessity of permanent improvements on the national forests in his annual report for 1911. All construction projects were aimed at facilitating 1) forest protection from fire, 2) administration of the business of the forest, and 3) development of the forest's resources. These three broad categories — protection, administration, and development — served for years as a shorthand method for describing the agency's progress to Congress.[5] It was no coincidence that these categories echoed certain language in the Transfer Act, which charged the secretary of agriculture with the "protection, administration, improvement, and extension" of the national forests. Improvements relating to forest protection received first priority. However, at the end of 1911, Graves reported that the effort to build lookout towers and establish communication systems had hardly begun. The following year, Graves reported that the main emphasis in improvements continued to be the construction of "trails, telephone lines, and lookout stations."[6]

Following guidance from the Washington Office, each district or regional office established procedures for the identification and development of lookout points. A 1915 report for Region 1 notes progress in developing its "fire protective" measures:

> Considering the development of the fire protective organization at its present stage with the organization as it was in 1910, we can unqualifiedly say that great progress has been made. Our methods of fire fighting have improved; our lookouts have been developed improvements have been installed' the men have been trained, and in a great many ways the protective organization now can hardly be compared to the organization of a few years ago.
>
> A great many more improvements are needed, opening up the country with trails and telephone lines, more lookout improvements must be built; more accurate data must be obtained with regard to liability and hazard, and the men must be trained. The men on whom we depend for fire protection largely are the District Rangers.[7]

The scale of the need expressed in the 1915 report is indicated by the relatively small number of lookouts developed region-wide: only 127 lookout points had been established and improved on the forests in Region 1. These included: eighty-five primary lookouts, five secondary lookouts, twelve lookout cabins, and three towers.

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[3] United States Department of Agriculture, *Forest Service National Forest Manual 1911-1913* (Washington: Government Printing Office).

[4] Ibid.

[5] USDA Forest Service, *Report of the Forester for 1911* by Henry S. Graves (Washington: Government Printing Office, 1911).

[6] USDA Forest Service, *Report of the Forester for 1912* by Henry S. Graves (Washington: Government Printing Office, 1912).

[7] "General Report of the Fire Situation of 1915 District One," pp 1-2. Folder 5100 "Fire Historical 1915-1918 Fire Seasons," Box 51, RG 95 Records of the Forest Service Region 1, Missoula, Montana Historical Collection 1903-1990 (hereinafter RG 95 Historical Collection) National Archives and Records Administration, Seattle, Washington (hereinafter NARA Seattle).

Of these, only 62 were equipped with standard map equipment.[8] The fact that only 12 lookout points had cabins indicates that the majority of the lookout men lived in tent camps located adjacent to their observation point.

In May of 1916, Region 1's Acting Regional Forester Rutledge sent a detailed letter to all forest officers, outlining the region's policy with regard to establishing, developing, and maintaining lookout points. It began by stating the general goal of detecting and suppressing wild fires:

> The primary object in placing the patrol forces of a Forest is to situate them so that the aggregate loss for normal years will be a minimum during the interval of time between the beginning of fires and the beginning of suppression measures. Where the number of lookout men available is not sufficient to adequately protect all resources, those should be covered most intensively which are most liable to danger and those left with a lesser degree of artificial protection which through the nature of the stand and fire history seem to offer the greatest resistance to fire spread. The type of Forest in District 1 (that) is most nearly self-protective, is the high Alpine Forests where the stands are open and the chances of crown fire are at a minimum.[9]

Rutledge provided definitions for the two types of lookout points: "Primary points" were those to which guards were assigned as an "essential part of the fire plan," i.e., manned during the regular fire season, while secondary lookouts were only manned during emergency fire conditions.[10] He also classified lookout points as either "extensive," or "intensive":

> Extensive lookouts are those which are selected to cover in a general way large areas of moderate risk; these are generally located near or on main divides. Intensive lookouts are those which are selected to cover intensively areas of particularly high liability; these are usually low points in valleys, on flats or on plateaus.
>
> Conditions are often such in large valleys having extensive bodies of merchantable timber that a low point situated in the main valley affords more satisfactory protection than a higher point farther away from the valley. If a large number of settlers are scattered through the valley, or from some other source, a large number of fires are known to occur annually, intensive patrol from a point in or very near the timber is to be preferred to the extensive patrol secured from a higher point at a considerable distance from the principal point of origin of fires.[11]

Rutledge's letter outlined the process by which forests could apply for 1918 fiscal year funding to improve lookout points and what to build if funding became available. Applications for appropriations had to be accompanied by a report and a variety of maps--all of which required field work. The first of these, a 'seen area' map, quantified the area that could be viewed from each lookout point. Detailed methodologies to prepare these maps had been developed two years earlier. The method used for areas with existing topographic maps was as follows:

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[8] "Lookouts in District 1" 1915. Folder 5100 Fire Historical 1915-1918 Fire Seasons, Box 51, RG 95 Historical Collection, NARA Seattle.

[9] Acting District Forester Rutledge to Forest Officers, O –Fire Memo, May 9, 1916. Folder: Lookouts Historical 1 of 2, Box 45, RG 95 Historical Collection, NARA Seattle.

[10] Ibid.

[11] Ibid.

> Make profiles on 7 ½ degree sectors entirely around the lookout point by platting the elevations shown on the contours on profile paper. Through the series of points thus established a profile line can be drawn, representing the earth's surface along that line. By projecting lines from the lookout point over the features, the amount of surface visible from the lookout can be determined. The visible parts of each line can be platted on the map and the seen areas between each set of lines colored in.[12]

Seen area mapping for areas without topographic map coverage was much more complicated. Rutledge referred to the results of the mapping as "Koch profiles," indicating that Elers Koch may have been responsible for developing the methodology.

Besides the seen area mapping, field personnel also were required to prepare a map showing the "type, area and condition of timber in the neighborhood of the lookout point," as well as one that illustrated the history of fires in the area, showing the location, number and cause of fires by year since 1914. All three maps were to accompany a report that included the exact location and type of proposed improvements, their cost of construction and annual cost of maintenance, the cost of provisioning the lookouts, and the distance of the lookout point from supervision.

If a forest was lucky enough to secure funding for lookout improvements, the next step was to plan on the most efficient way to improve them. The first essential improvement was the construction of a "passable trail" between the ranger district headquarters and the lookout point.[13] For lookout points with a "sharp top" that facilitated direct vision of a large area, the lookout man's living quarters and the observatory were to be combined in one building. Rutledge identified the standard "lookout house" in Region 1 as a 12' by 12' frame building with a "band of glass entirely around the building at a convenient height for observation."[14] He warned the forests to adhere to the new regional standard rather than the types of lookout cabins that had been built previously. At lookouts where no sharp peak was available, it would be necessary to construct higher buildings or build towers to serve as the observatory. The procedure to determine the optimal height of the observation tower was as follows:

> Survey lines across the highest part of the peak and over the two parts of the mountain which it is necessary to clear to the approximate point to which vision is necessary. Then construct a profile and by intersection lines determine the height to which it will be necessary to build to provide satisfactory vision.[15]

If the optimal height of the tower was twenty-five feet or less, the regional office recommended using the standard lookout house, on either a pole or dimensional lumber tower. If the required height was between twenty-five and sixty feet, a tower only was recommended. And, in instances where the required height exceeded sixty feet, the regional office proposed the following:

> … unless the liability is very great two points a short tistance (sic) apart should be selected and a lower tower erected on each. For the distance apart which the towers may be without dangerously decreasing the efficiency of the lookout, haze figures for the peak in question should be studied also. The extra

[12] Ibid. pp. 3-4.

[13] Ibid, p. 9.

[14] Ibid, p. 15.

[15] Ibid. pp. 6-7.

> expense involved in stationing a man at each tower during extreme emergency fire conditions will be more than offset by the more intensive protection secured as the time when it is most needed.[16]

At lookout points where the quarters and the observatory could not be combined, the quarters were to be located within 100 yards of the observation tower. The previous practice of building cabins at the nearest water was discouraged as it decreased the "efficiency of the lookout man."[17]

Using the directives handed down by the regional office, each forest supervisor provided guidance in proper fire detection procedure to district rangers and the lookout men that they supervised. A 1919 memo for the Kootenai National Forest described the lookout men as the "eye of the protective organization." Topics covered in the memo included: how to set a base board on which to place and orient forest maps, a list of equipment to be provided to the lookout men, how to determine the direction and distance of a fire using fixed landmarks, and rules for camp sanitation. Under the heading Lookout Headquarters Routine, the memo stated "The lookout point will be occupied as nearly continuously as the location of the lookout camp and living conditions will permit and constant vigilance must be maintained. … Trips off the lookout point for water or to visit secondary lookout points will be made during such periods of the day as the District Ranger may direct." The lookout men were instructed to keep their lookout buildings and campsites neat and sanitary, and to avoid "needless destruction or injury of living trees," as "future lookout men will also appreciate shade and pleasant surroundings."[18]

In spite of the completion of a regional plan for lookout point development, construction of lookout improvements occurred relatively slowly. Prior to 1920 only nine lookout observatories had been built in the region, with five more added that year. The next decade saw a rapid uptick in lookout construction with sixty-one structures added in the five-year period between 1921 and 1925, and another 130 added between 1926 and 1930. Still the number of improved lookout points represents only a quarter of the roughly 800 occupied lookout points integrated into the region's fire detection system by 1930.[19]

Clyde P. Fickes and the development of the L-4 Lookout

The influence of Clyde Fickes on lookout point development began near the end of the 1930s, when he worked on the Pend Oreille National Forest in Northern Idaho. In 1927, the Port Hill District had been allotted money to build a lookout house on Smith Peak. According to Fickes, the forest did not have construction plans for the lookout. Fickes, who grew up in his father's carpentry shop, drew up plans for a 12' by 12' frame building with a 6' by 6' "cupalo." He ordered lumber and hardware, and planned to cut it into dimensions suitable packing on mules to Smith Peak during the following field season. In early 1929, Fickes attended an annual meeting of the "Allotment Conference for the Idaho forests in Spokane."

> Fire control was the principal topic of discussion, and the great need for more and better fire discovery facilities. At that time there were only half a dozen or so satisfactory, improved fire lookouts on the

[16] Ibid, pp. 7.

[17] Ibid, p. 15

[18] Acting Forest Supervisor "Instructions to District Rangers and Lookout Men," June 1, 1919. Folder: F Statistics Bitterroot General Permanent Folder, Box 21, Series BIT05 Forest Supervisor's Alpha Files, circa 1900-1960 (hereinafter BIT05); RG 95 Records of the Forest Service: Bitterroot National Forest (Hereinafter RG 95 BNF), NARA Seattle.

[19] Ralph L. Hand, Assistant Chief Division of Fire Control "History of Region 1 Lookout System," August 23, 1954. Folder: Historical: Lookouts, Box 46, RG 95 Historical Collection, NARA Seattle. Note that Hand's report was compiled from the records of Engineering and Fire Control.

> Idaho Forests of Region 1. At that time the Region did not have any kind of structural plans and specifications for a lookout structure. … The few lookout structures that had been put up were built by someone handy with tools and knowing something about carpentry work and where the building material could be hauled within a short distance of the building site. Our problem was to move materials on pack mules. Region 6, at Portland, Oregon had a plan for a 12' by 12' building with an observation cupalo (sic) on top which was developed for that Region by some architectural engineer. However, the specifications were such that the cost of the material for the building was so high that Region 1 did not feel we could afford a building that cost from $1,200 to $2,000 to construct. It was relayed to the Allotment Conference group that Fickes had prepared plans for a ready-cut lookout to be built on Smith Peak on the Pend Oreille the next year. Cost of material was less than $100. During the discussion I made some remarks about the simplicity of the problem and its solution, and that anyone with a little know-how and savvy should be able to solve it.[20]

In February or March of 1928, Fickes proceeded with cutting and packaging the materials for the Smith Peak Lookout. Meanwhile, as a result of his comments at the Allotment Conference, the regional office requested that he take a temporary detail to Missoula for the purpose of designing a standard lookout house for Region 1. The first plan that Fickes developed must have been similar to the Region 6 lookout, as he described it as a 12' by 12' plan topped with a 6' by 6 'cupalo.' Joe Halm, a draftsman in the regional office prepared the tracings and each 'readicut' piece was numbered and shown on the construction plans, the latter accompanied by detailed instructions for erecting the building. Perhaps in contrast to the Region 6 plan, Fickes' design used standard millwork (window sash and doors) and hardware that could be purchased at any lumberyard. After the plans were complete, the regional office decided to build a sample:

> At a lumberyard in Missoula I made arrangements to purchase the materials, and for a place to cut the material. I hired two carpenters to do the cutting, and I did some of the work myself. The bundled material was hauled down to the Lolo Forest and packed up to the top of Mt. Baldy, a lookout point on the Superior Ranger District. Then Joe Halm and I went up to the Lookout and put the building together, using only a hammer, screwdriver, and carpenter's level. The total cost was less than $400.
>
> Joe was an excellent photographer and took many pictures of all stages of the construction for the official record and to convince skeptical Supervisors and Rangers that it could be done. Orders aplenty for this new type of lookout structure came in, and the next winter the Spokane Warehouse set up a plan to readicut and assemble all the material for a number of the new lookouts. A crew of District Rangers who were experienced packers (mules that is) was assembled, and the complete material for each lookout house was assembled into mule pack loads to be shipped as a unit. Upon arrival at the Forest shipping point or Ranger Station, all that was necessary was to load the bundles on the mules, pack it up to the peak, and send up a couple of handymen who could read, equip them with a hammer, screwdriver, and level. We had some complaints, of course, about shortage of pieces or incorrect lengths, but in every case, it was found that the erectors had not followed the numbered instructions for assembly. Eventually, we had crews around the Region bragging about how fast they could assemble a 12' by 12' lookout with cupalo (sic) ready for occupancy.[21]

[20] Clyde P. Fickes, Forest Ranger Emeritus, "Recollections," 1972. Folder: 1680 Historical Lewis & Clark NF Moose Creek Campground, etc., Box 76, RG 95 Historical Collection, NARA Seattle.

[21] Ibid, 83-84.

After the success of the first 'readicut' lookout, the regional office asked Fickes to move to Missoula, offering him a new position as an improvements inspector, under the Office of Operations in the Engineering Division. In his new job, he supervised the design and construction of all improvements in the region including: "… trails, telephone lines, buildings, campground layouts and later, radio communications."[22]

Fickes moved his family from Sand Point, Idaho to Missoula in May of 1929. The following August, a major wild fire burned a large swath of the Clearwater National Forest along the Lochsa River corridor in Idaho.[23] At the conclusion of the fire season the regional office considered ways to improve fire discovery while "keeping the lookouts comfortable." As part of the discussion, then-Regional Forester, Evan Kelley, expressed dissatisfaction with the cupola-style lookout building, because the lookout men "wasted too much time climbing up and down." He suggested building a 14 ft. by 14 ft. building "where the men would be seeing all the time." With Kelly's suggestions, Fickes developed the first L-4 prototype which consisted of a 14 ft. by 14 ft. wood frame "cab," with a gable roof. This lookout house was large enough to accommodate fire-finding equipment as well quarters for the lookout man. Not long after developing the first version of the L-4, Fickes modified the plans, replacing the gable roof with a pyramidal hip roof.[24] All four walls had banks of nine-light, sliding wood window sash, which allowed the full range of view. Drop siding covered the exterior walls below the windows and the roofs were covered with sawn cedar shingles. Top-hinged exterior shutters could be raised and lowered when the lookout was manned.

Regional Forester, Evan Kelley, approved the drawings for the pyramidal roof L-4 lookout house in 1931.[25] It was one of three lookout shelters included in the *Region One Handbook Construction and Maintenance of Forest Improvements,* compiled by Clyde Fickes. The date of the handbook's first edition is unknown; however, the volume was revised and reissued in December of 1935. Although the L-4 house could be built directly on the ground it was more typically built on a tower. The handbook included separate plans for lookout towers of different heights in increments of ten feet. The plan for a ten-foot-high tower was labeled "T-10," that for a twenty-foot-high tower T-20, and so on through T-50. Each tower plan was labeled "Lookout Tower with Living Quarters for use with Plan L-4." All of these early towers (some built with locally available logs, some with milled lumber) had slanted legs and were almost always untreated. Specifications for the catwalk that surrounded the lookout house were included with the tower plans.

The 1935 handbook also included plans for two other types of observation shelters. The L-6 shelter was an 8¾ ft.-square, wood-frame cab identified as a "Patrol Shelter or Tower Cupalo (sic)." This smaller building, also designed by Fickes, was approved by the regional forester in 1932.[26] The third shelter was a 7 ft.-square metal cab for use with metal towers. Also approved in 1932, this does not appear to have been designed by Fickes. Finally, the handbook also included plans for a simple patrol tower topped by a platform. Designed by Fickes, this structure is identified in the 1935 handbook as "Patrol Tower T-3." It could be built in various heights,

[22] Ibid, 106. Note that Forest Service employees commonly refer to the L-4 lookout houses as a "cab."

[23] Elers Koch, who worked for the US Forest Service from 1903 through 1940, described the 1929 Lochsa Fire as the most memorable and hard-fought fire of his career. The fire started on August 1, and was finally brought under control on September 8. Elers Koch *Forty Years a Forester1903 -1943 (*Missoula: Mountain Press Publishing Company, 1998) 108-120.

[24] Although the reasons for this modification have not been identified, it may have to do with the fact that rafters for pyramidal roofs require shorter rafters, thus less material and of sizes that were easily 'cargoed' on mules.

[25] Lookout House Plan L-4. Clyde Fickes *Region One Handbook Construction and Maintenance of Forest Improvement* (USDA Forest Service, Region One, Missoula, Montana 1935 revised edition).

[26] Patrol Shelter or Tower Cupalo Plan L-6. Fickes *Region One Handbook* 1935.

with the observation platform reached by a ladder. Howard Flint, in charge of the fire program in the region, approved the drawing in 1933.[27]

Besides plans and elevations, Fickes' handbook provided guidance on virtually every aspect of lookout construction, including: how to mix, form, and pour concrete for tower footings; how to install a lookout telephone; and a list of tools required for erecting both wood and steel towers. Regarding towers Fickes wrote: "It is a pretty well settled fact that the simplest and cheapest way to build towers 30 ft. or over in height is to assemble them on the ground and then raise the whole tower as a completed structure, putting in the stairways afterward and building the houses after the stairs are in."[28] Furthermore, towers from 10 ft. to 30 ft. high would be wood braced, while those between 40 ft. and 50 ft. high would be cable braced. The handbook directed that any tower over 50 ft. high must be made of steel.

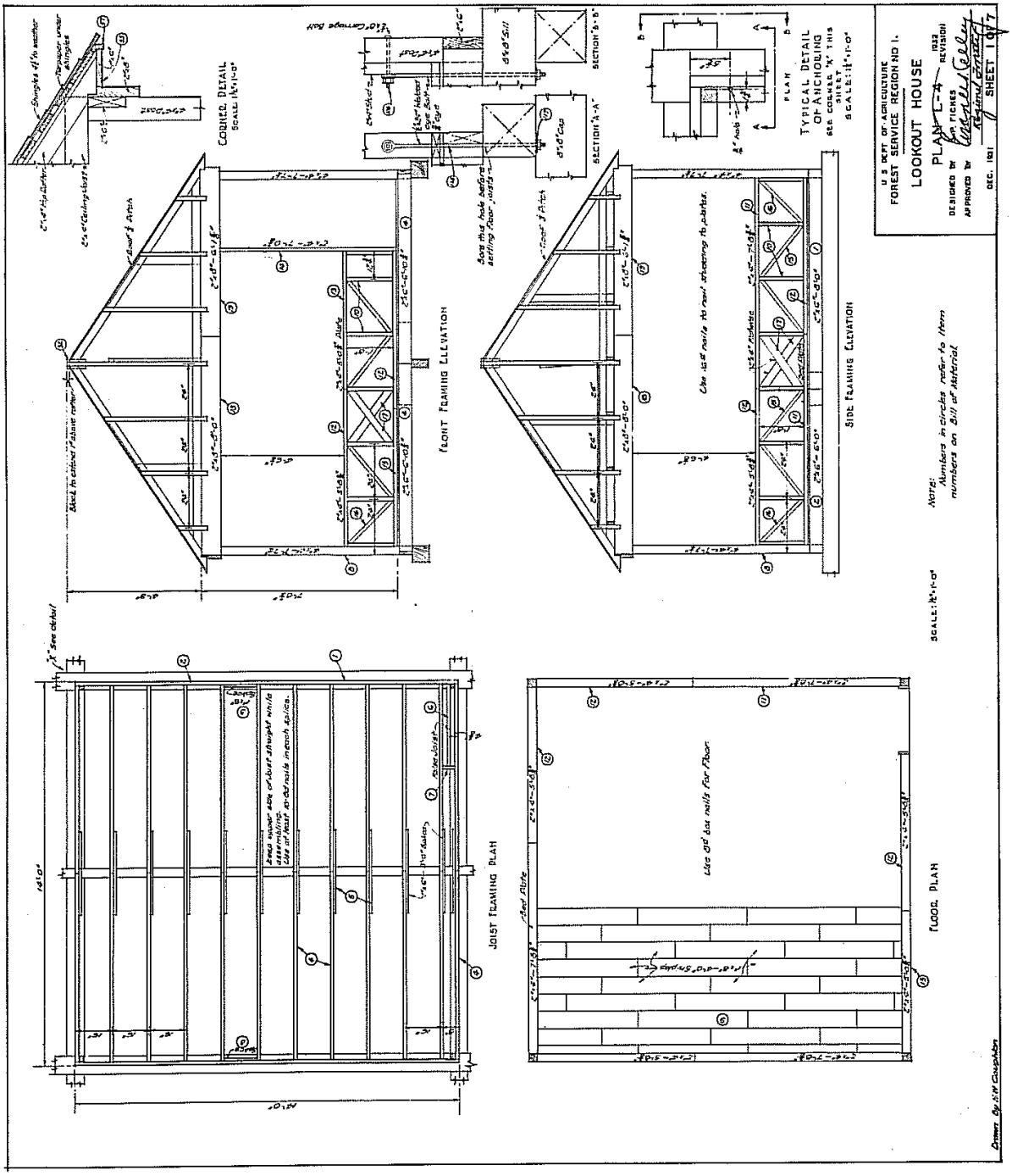
The timing of publication of the Region 1 handbook may have been a direct result of the establishment of the Civilian Conservation Corps (CCC). Created in 1933 as one of President Franklin D. Roosevelt's New Deal programs, the CCC provided manpower to national forests throughout the system. The US Forest Service handled the lion's share of CCC projects, employing more than 50 percent of all enrollees. CCC enrollment peaked in September 1935 at 500,000. In that summer there were 82 camps in Idaho and 32 in Montana.[29] The Region 1 office undertook a myriad of projects with the CCC. Road and trail construction received first priority. The primary objective was to open more country to truck transport and thereby improve the agency's ability to fight forest fires. Within two years the CCC constructed 1,850 miles of forest roads, 320 miles of trails, and 350 bridges on the national forests.[30]

[27] Patrol Tower T-3. Fickes *Region One Handbook* 1935.

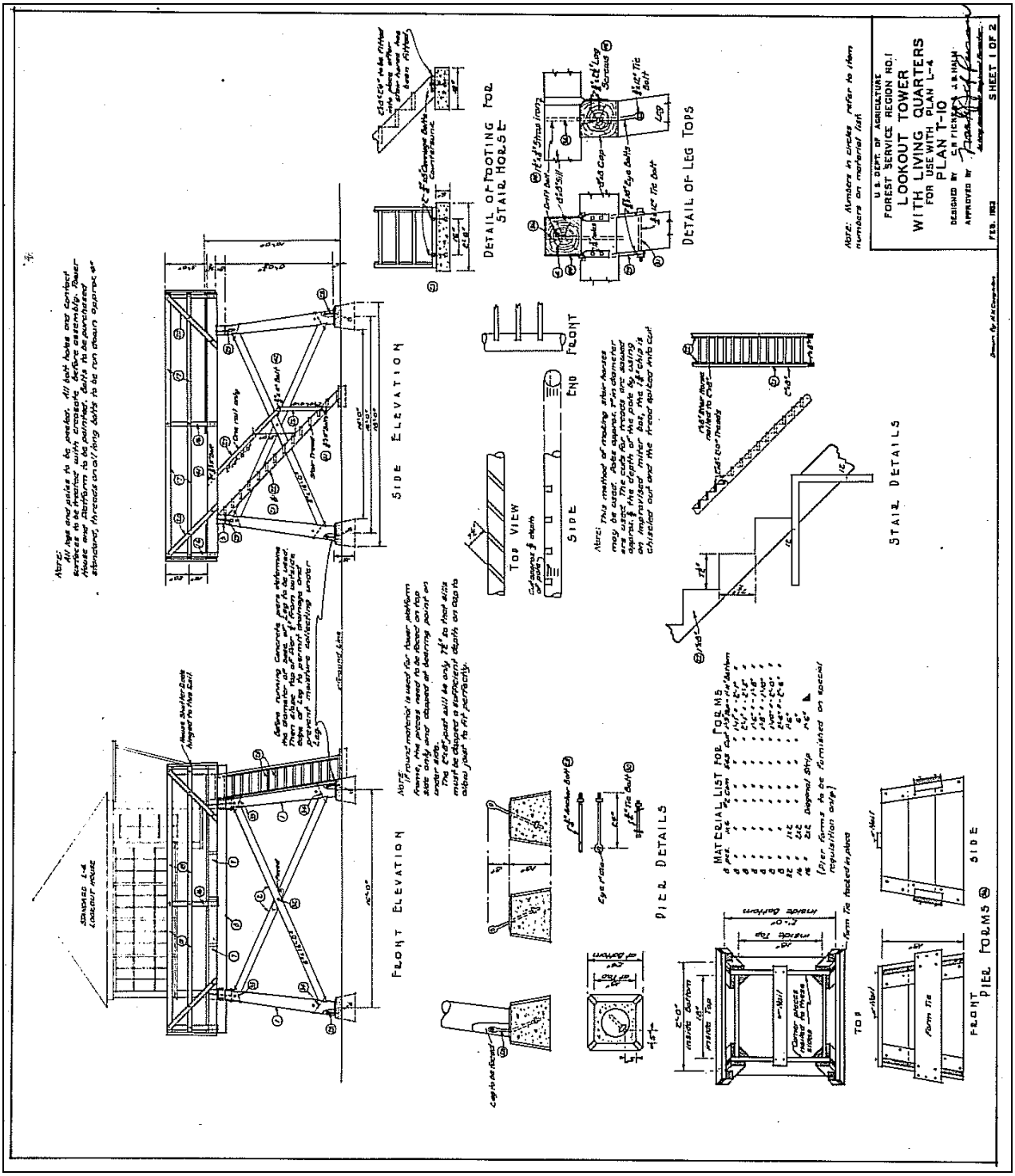
[28] Fickes *Region One Handbook* 1935: L-1.

[29] John A. Salmond, *The Civilian Conservation Corps, 1933-1942: A New Deal Case Study* (Durham: Duke University Press, 1967).

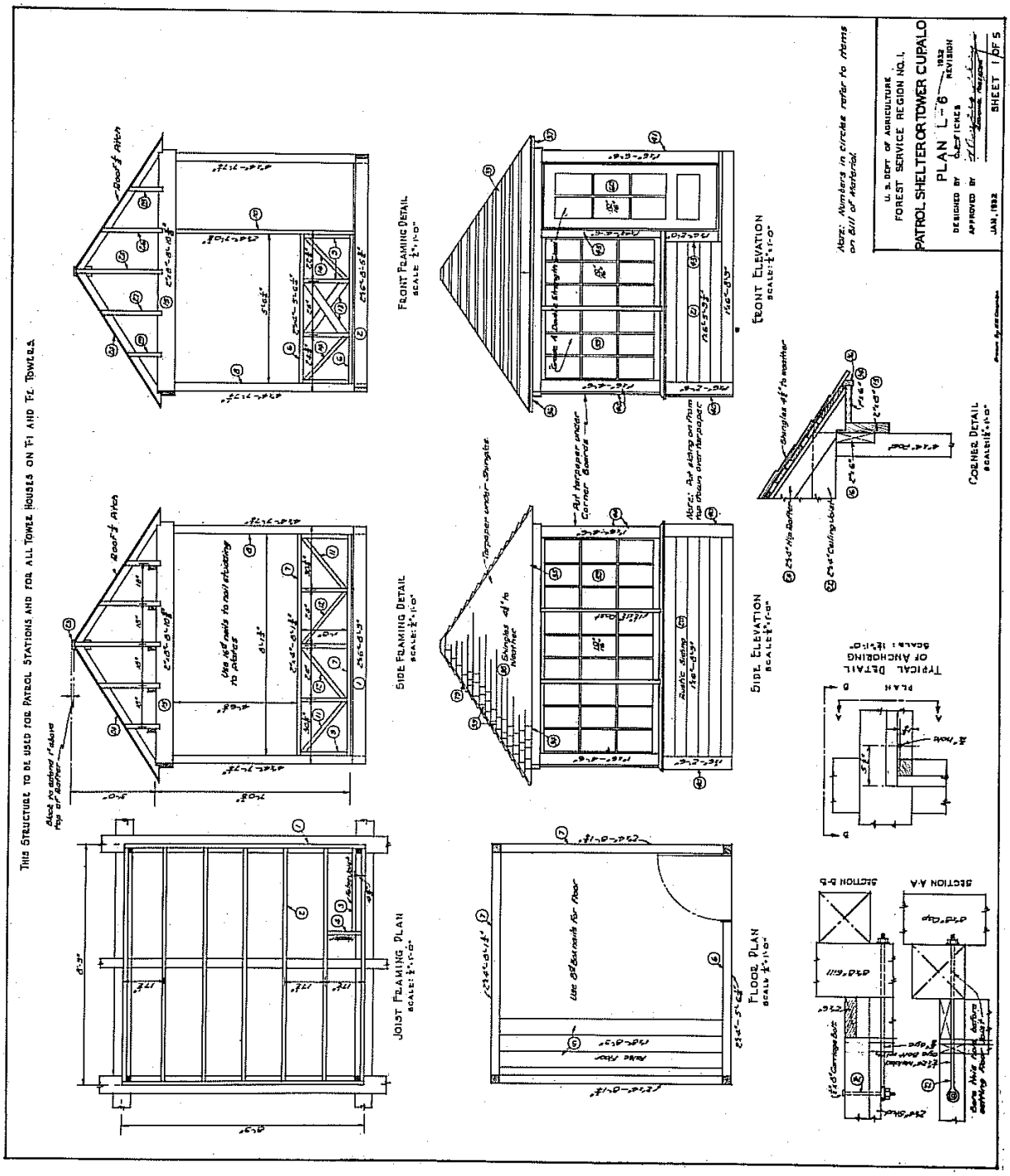
[30] USDA Forest Service, *Report of the Forester for 1936* by F. A. Silcox (Washington: Government Printing Office, 1936).



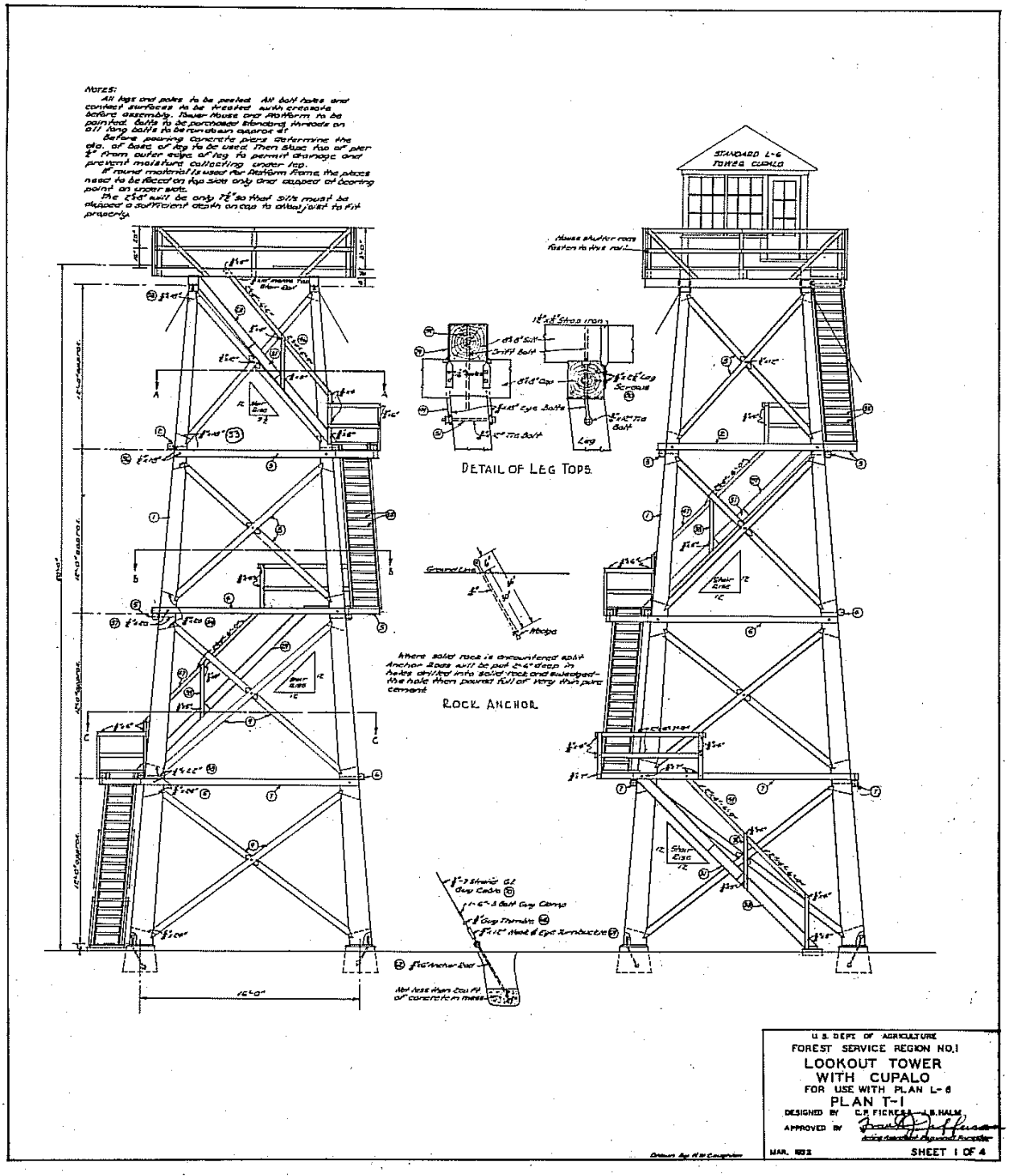
Plan L-4 Lookout House (Fickes *Region One Handbook* 1935).



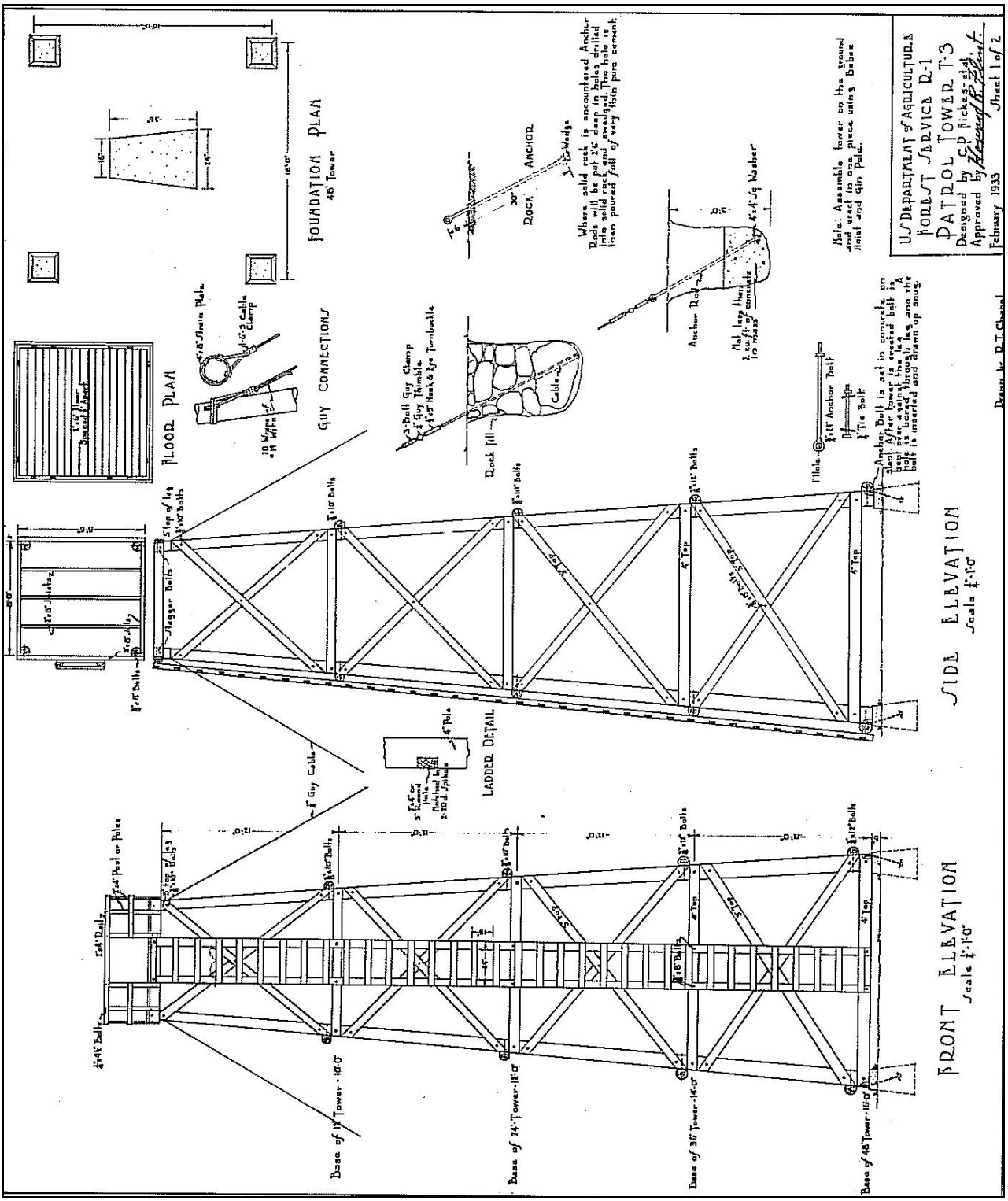
Plan T-10: Lookout Tower with Quarters (Fickes *Region One Handbook* 1935).



Plan L-6 Patrol Shelter or Tower Cupalo (sic) (Fickes *Region One Handbook* 1935).



Plan T-1: Lookout Tower with Cupalo (sic) for use with Plan L-6 (Fickes *Region One Handbook* 1935).



Patrol Tower T-3 (Fickes *Region One Handbook* 1935).

Such a large reserve of unskilled labor created a need for hundreds more supervisory personnel than the Forest Service could put into the field. As a result, the agency received authorization under the Emergency Relief Act to recruit unemployed or underemployed men whose salaries could not exceed ten percent of the existing payroll. The regional office allotted a share of these ten percent funds to the division of engineering, and Clyde Fickes was placed in charge of recruiting a staff of architects, landscape architects, and mechanical draftsmen to supervise the Forest Service's improvement program. The abundance of new projects and supervisory personnel, in turn, created the need for a guide that could be used by field personnel. As stated by Fickes in the introduction to the handbook:

> This handbook is intended primarily for the use of the men in the field who actually do or superintend the doing of the construction and maintenance work on improvements. …This handbook is intended to be a working manual describing the better mechanical ways of doing things and including information of value in determining the kind of material most satisfactory for any particular job.[31]

The degree to which CCC crews were enlisted to erect lookout structures is unclear. A 1940 press release for the *Daily Missoulian* stated that CCC enrollees had built 250 lookouts in the years since the establishment of the corps.[32] What is clear is that the increase in manpower and construction dollars made available through the CCC and other New Deal-era programs resulted in a huge jump in lookout improvements. Writing in 1954, Ralph Hand, Assistant Chief Division of Fire Control noted that between 1930 and 1935, 531 new lookout structures were added to Region 1 forests, more than twice the number built in all previous years. This included 191 towers and observatories in 1934 alone, the year following the creation of the CCC.[33]

Hand also described the influence of Lloyd Hornby, who directed "presuppression planning" during the period of rapid lookout point development. He described Hornby's work as a "complete overhaul of the lookout system, resulting in the abandonment of many points …." In some instances construction got ahead of planning, resulting in some new structures never being occupied. In other cases, inferior lookout points were retained to avoid abandoning a new structure. "Eventually these problems were all ironed out, but not without a considerable loss in efficiency."[34]

The reorganization of the presuppression program was mostly complete by about 1938, when the availability of construction funding slowed. Using an inventory produced by Clyde Fickes in 1938, supplemented with records from fire control files, Hand produced a list of lookouts in the region that had been built by the time that construction funding was curtailed (Table 1). Region wide, 838 lookout points had been improved with various types of structures. Slightly more than half (433) were L-4 lookout houses with pyramidal hip roofs.[35]

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[31] Fickes *Region One Handbook* 1935: Introduction.

[32] "A Backward Glance and a Forward Look" Press release prepared for the *Daily Missoulian* 1940. Folder: 1680 History Miscellaneous Items W. Montana, 1918. 1937, 1949, 1944, Box 13, RG 95 Historical Collection, NARA Seattle.

[33] Ralph L. Hand, Assistant Chief, Division of Fire Control "History of Region 1 Lookout System," August 23, 1954. Folder: Historical: Lookouts, Box 46, RG 95 Historical Collection, NARA Seattle.

[34] Ibid.

[35] Ibid.

Table 1. Region 1 Lookout Improvements in 1938

Type	Description	Number
Miscellaneous	(no standard plan)	26
Old R-6	12 x 12 frame w/ cupola	51
Old L-1	14 x 14 log designed by D. L. Beatty	5
Old L-2	12 x 14 frame w. cupola (1928 model)	10
L-3	12 x 14 log with cupola (1928)	39
First L-4	14 x 14 frame with gable roof (1930)	35
Second L-4	14 x 14 with larger windows than first L-4	56
L-5	14 x 14 log with gable roof (1930)	16
L-4	14 x 14 frame with hip roof (1932)	433
Columbia Falls redi-cut L-4	14 x 14 frame with hip roof	6
L-6	8 x 8 frame with hip roof (1932)	89
Steel towers	7 x 7 Steel cabs	21
Towers without cabs		51

Innovations in Fire Detection and Suppression 1939-1954

In 1939, the Forest Service conducted the first serious experiments in parachuting men into dense forests to fight fire. Based on this initial success, in 1940 Seeley Lake District on the Lolo National forest hosted one of two smokejumper training camps in the national forest system. Seven new "smokejumpers" were hired and trained at Seeley Lake before being moved to Moose Creek Ranger Station, deep in the Idaho backcountry.[36] The following year the forest service decided to base the smokejumper program in Region 1, specifically in Missoula, the home of the Johnson Flying Service, which was contracted to deliver both supplies and men to remote backcountry areas. Three, eight-man squads were employed during the 1941 fire season, one at Nine Mile Ranger Station on the Lolo National Forest, one at Moose Creek Ranger Station on the Nez Perce National Forest, and one at Big Prairie Ranger Station on the Flathead National Forest.

Just as the smokejumper program was getting started, the United States entered World War II. Most of the men with previous parachute and firefighting experience enlisted in the military and for the next four years, the aerial

[36] At the end of the 1940 season, the smokejumper Project Leader, Merle Lundrigan, wrote a report outlining the results of the season, in which he emphasized the importance of having the lookout names painted on the roofs or shutters, so that they could be viewed from the air. Lundrigan, "Report on Aerial Fire Control Activities," December 10, 1940. Folder: Report on Aerial Fire Control Activities, December 10, 1940, Box 45, RG 95 Historical Collection, NARA Seattle.

suppression program was sustained by members of the Civilian Public Service (CPS) Program, many of whom were conscientious objectors.

During the final year of World War II the US Forest Service established the first experimental "aerial forest fire control area" including parts of the Flathead, Lewis & Clark, Lolo, and Helena National Forests. Referred to as the "Continental Unit," it was the first time that fire detection from airplanes and fire suppression by smokejumpers replaced fixed detection points (lookouts) and ground-based fire crews. This experimental program, apparently managed by the regional office, marked a major change in fire control procedures. The experiment lasted three years, after which the responsibility for fire control was returned to the various forests.[37] All four forests continued using air detection, integrating it into their fire management plants.

In 1947, the Coeur d'Alene National Forest initiated its own air-ground fire detection program. In contrast to the four forests included in the experimental Continental Unit, which had vast swaths of road-less areas, the Coeur d'Alene had good road access to virtually all its lands. By moving to an air-ground detection system, the forest was able to reduce the number of fixed detection points (lookouts) from 33 to 11.[38] The proven success of the new aerial detection and suppression system in both roadless and road-accessible forests convinced more Region 1 forests to adopt the new system. Between 1945 and 1950 the number of fixed lookout positions region wide dropped from a high of 844 to 501 as additional forests adopted aerial detection. By 1954, twelve of the sixteen forests then included in Region 1 had adopted an air-ground fire control system in whole or in part. Only the Beaverhead, Custer, Deerlodge, and Gallatin forests continued to rely entirely on fixed detection points. Consequently, the number of lookout points had declined again from 501 to 272.[39]

Lookout Reconstruction and Replacement, 1953 through the 1960s

In the spring of 1953 the regional office began collecting data to develop a five-year plan for replacing deteriorating lookout structures. The region purchased forty-nine lookout kits during the 1953 and 1954 fiscal years and by August of 1954, construction funding had been secured for all by four or five. For the forests that had completed the transition to an air-ground detection system, the task of prioritizing lookout replacement was made easier by the fact that they had already identified the lookout points that were critical to their fire detection plan. Those forests that had not converted to the air detection system had a more challenging task. As stated by Hand:

> The most difficult part of our future planning is in making the proper decisions in regard to those units (forests) not yet on air-detection basis. About the best that we can do is stick with the high-priority points and turn thumbs down on any of those that are questionable.[40]

The results of the initial analysis found that thirty-five lookouts required immediate replacement, while 100 needed to be replaced within the next five years. By 1955 some of the new lookouts structures were under construction. A few forests were "… planning to use their own savings to purchase and erect new structures." Given the backlog of work, the region outlined rules for the forests to follow when replacing lookout structures:

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[37] Letter to Pete Hanson**,** October 3, 1956**.** Folder: 1380 Reports Historical Reports to the Chief, FY 72, 73, 74, 75, Box 9, RG95 Historical Collection, NARA Seattle. This letter was singed by the directors of Region 1 and by the heads of state and private forestry.

[38] Ibid.

[39] Hand "History of Region 1 Lookout System," August 23, 1954. Folder: Historical: Lookouts, Box 46, RG 95 Historical Collection, NARA Seattle.

[40] Ibid. Note that the number of developed lookout points varies depending on the source of the information. All documents agree however, that the number of developed lookouts region-wide was in the range of 830 to 840.

1. No lookout will be given a priority in the replacement program until after a complete inspection has been made by a qualified engineer or other person familiar with construction principles.

2. No lookout will be included in the replacement program on western forests until after at least a preliminary air-ground detection plan has been developed for the unit concerned or the present detection plan reviewed by this office. This is needed to help set priorities and avoid making mistakes.

3. Safety will be given primary consideration in setting up priorities on the replacement list.

4. Replacement will be deferred if it is determined feasible to make major repairs and if such repairs with lengthen the safe life of the structure to an appreciable degree.

5. Last minute shift to another lookout, after a structure has been delivered, will be allowed only in exceptional cases.[41]

The majority of the replacement units provided by the regional office appear to have been modified versions of the 1931 pyramidal roof L-4. In general dimensions, this later version was similar to the 1931 plan, with a 14' by 14' footprint and a pyramidal hip roof. A major change was an "improved" system of fixing the shutters in the open position. In Fickes' original design the top-hinged shutters were simply propped open with 2" x 2" struts secured to the catwalk railing or the base of the lookout house if the house was built on the ground.

Double Arrow Lookout, an original L-4 plan with struts holding the shutters open (Sydney Bacon, 2016).

[41] P. D. Hanson, Regional Forester "Memorandum for Forest Supervisors E (F) Improvements Lookout Replacement Program," November 18, 1954. Folder: E Improvements Bitterroot Lookout Replacement; Box 6; BIT05; RG 95 BNF, NARA Seattle.

In the modified plan raised shutters were bolted to an "outrigger." The outrigger was formed by extending the interior ceiling rafters beyond the four exterior walls of the building. Two 2" x 4" plates were attached perpendicularly to the extended rafters. Threaded bolts evenly spaced along each plate extended down from the plates. When the shutters were raised, the bolts fit through holes in the shutter and were held in place with wing nuts. The revised plan also included four-light window sash, with one in the center of each wall opening casement fashion, and fir floors rather than maple floors specified in the 1931 version. The plans for this revised version of the L-4 originated from Region 6 (Washington and Oregon), and approved by the regional forester in 1936 and amended in 1944 and 1948.[42] By the early 1950s, changes had also been made to tower design. New specifications called for straight tower legs and the use of treated timber.

Mineral Peak Lookout, a modified L-4 plan with outriggers to hold shutters open (CRCS 2016).

The effort to replace deteriorating lookouts continued throughout the 1960s. A general report published by the regional office in 1964 reiterated some of the problems, noting that many of the cabins and towers were over 30

[42] A. Richard Guth and Stan B. Cohen, *A Pictorial History of the U.S. Forest Service 1891-1945 Northern Region,* p. 108-109 (Missoula: Pictorial Histories Publishing Company, Inc. 1991). It is interesting that the Washington Office of the US Forest Service published a set of standard lookout plans in 1938, which included the 1936 iteration of the L-4 lookout. Neither Region 6 nor the Washington Office credited Clyde Fickes for his efforts in producing the first L-4 prototype. USDA Forest Service "*Standard Lookout Structure Plans* (Washington D.C.: USDA Forest Service Division of Engineering).

years old and deterioration was "progressing more rapidly than replacement." The same report also noted that the overall number of manned lookout points had declined slightly to 246, noting that the integration of air patrols with fixed point detection had facilitated this reduction.

> Lookouts providing a view of high-value lands, lands of high fire hazard and areas of frequent fire occurrence are manned during fire season. Air patrol is used to supplement detection provided by these fixed lookouts. The frequency of air patrols is determined by the local fire danger. This combined air-ground detection program is more flexible and less expensive than the old ground detection approach.[43]

Although lack of funding continued to affect the lookout replacement program, new structures were added, usually at previously existing lookout points. After about 1960, most of the new lookout houses were the R-6 Flattop. Buy this time, improvements in transportation systems facilitated the use of heavier construction materials, and the R-6 Flattop lookout was typically constructed on base or tower made of concrete blocks. According to Kresek, this plan was designed in 1953, and models were still being built as late as 1984, for a cost of about $28,000 each.[44]

Further innovations in fire-detection technology

In 1982, the region integrated another new technological innovation into its fire detection system with the adoption of the Automatic Lightning Detection System (ALDS). A results of collaboration between the Bureau of Land Management, the US Forest Service's Northern Forest Fire Laboratory (in Missoula), and the University of Arizona, Joe Wagenfehr, head of the Division of Aviation and Fire Management in the region, described the ALDS as an "electronic lookout system." ALDS "permits the fire manager to assign fire detection aircraft to those lightning path areas, without the surveillance aircraft having to fly over much larger areas, outside the path of the lightning storms." After the adoption of ALDS, fixed lookouts used for fire detection were limited to areas that could not be effectively covered by ALDS and fire patrol aircraft and areas with high fire ratings because of human-caused fires.[45]

By 1992, all of the forests in Region 1 had integrated ALDS into their fire coordination systems, with the result that only seventy-two lookouts were manned region-wide.[46] This large scale reduction in the use of fixed point lookouts was due primarily to the combination of aerial fire detection, coupled with ALDS. Since 1992, the number of fixed-point lookouts in Region 1 has decreased further. Many of the lookouts made redundant by new detection methods have been destroyed deliberately, while some were simply abandoned or maintained as "scenic vista points," for forest visitors. Since then a few abandoned lookouts have been restored and adapted for a new use as recreational rental units in the region's cabin rental program.

Lookout Development on the Lolo National Forest

The establishment and improvement of fire lookout points on the Lolo National Forest tracked with regional guidance. Besides tent camps, its earliest lookout improvements that predated the 1916 guidance from the regional office included: a 1913 log cabin on Illinois Peak; a 1914 pole tower on Gold Peak; and a 1914 log

[43] USDA Forest Service Northern Region "National Forests and the Community 1964 in Review," p. 6. Folder: 1380 Reports Historical Northern Region in Review 1957-1966, Box 10, RG 95 Records of the Forest Service Region 1, Missoula, Montana Historical Collection 1903-1990, NARA Seattle.

[44] Ray Kresek *Fire Lookouts of the Northwest,* 12 *(*Fairfield WA: Ye Galleon Press 1984).

[45] Press release dated Feb. 1992"Seventy-Two Lookouts to be Operated This Summer Down from 800 Used in 1938" Folder: Historical: Lookouts, Box 46, RG95 Historical Collection, NARA Seattle.

[46] Ibid.

cabin and alidade at Ward Peak. By the end of the nineteen-teens at least twelve additional lookout points had been improved with either timber or pole platform towers (some with associated log cabins). One, St Patrick Lookout, had a D-6 Cupola- style lookout built in 1919.[47]

In May of 1921, Forest Inspector, Howard Flint, conducted a seven-day field review of the Lolo National Forests' fire organization, inspecting all aspects of its fire program including trips to at least four lookout points. In at least two cases, the lookout men were living at the district headquarters and walked to their lookout towers each morning. Plans were underway, however, to establish tent camps near their towers. Flint noted that scene area maps needed to be completed at one lookout to evaluate its relative usefulness, and that the quality of the maps and alidades at several points, and the telephone connections at most points needed to be brought up to standard. He was also felt that the forest's guidance on observation hours for lookout men needed to be modified. As it stood, the men were told to make one observation at 6:30 am, after which they would devote their time to "camp work" until noon. From noon to 8:00 pm, the lookouts were expected to be on constant observation duty. His recommendations included the following:

> Consider very carefully the question of requiring more hours of observation from lookout men. Probably in no case should more than two hours elapse between 7:00 am and 7:00 p.m. without a careful observation; the present instructions appear to contemplate a lapse of 5½ hours in the forenoon. A good observation every hour would be greatly preferable, and seems very reasonable.[48]

By 1922 a variety of additional lookout improvements were either planned or under construction in Lolo ranger districts stretching from Powell, Idaho to St. Regis Montana. On the Powell district, employees were building a D-1 log lookout house at Indian Post Office.[49] In the Quartz district in Montana, the materials for a new frame lookout house for St. Patrick's Peak was ready to transport to the building site, while a new log lookout 'cabin' was under construction on Stark Mountain. Howard Flint noted that the district ranger on the Quartz Ranger District had "… the unusual opportunity to compare costs between log and frame lookout buildings because he is building one of each under conditions that are nearly identical in each case. When the jobs are completed a write-up comparing the two buildings should make a very interesting bulletin article."[50]

Clearly, by the early to mid 1920s each forest was investing substantial effort to refine its protection plan.[51] Inspections of surrounding forests, including the Missoula National Forest (much of which was eventually

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[47] Ibid., 380-381.

[48] Howard Flint, Forest Examiner, "Memorandum" dated 6/4/1921. Folder: Lolo 1904-1923 1 of 4, Box 11, RG 95 USDA Forest Service Region 1 Division of Operations Inspection Reports 1906-1944 (hereinafter Inspection Reports), NARA Seattle. Lolo Forest Supervisor, Wilfred White responded to Flint's recommendations, mostly in the affirmative. He did not however agree with Flint on observation hours stating that if the lookout men were not required to make their first observation at 6:30 a.m. they began their day in a "tardy, slip-shod way" and furthermore that early observations were valuable. He explained that the instruction to the Lookouts represented the "minimum requirement during a favorable season, and there is no question but that Rangers will require their lookouts to make more frequent observations as necessity arises." Forest Supervisor, Wilfred W. White to District Forester, June 6, 1921. Folder: Lolo 1904-1923 1 of 4, Box 11, RG 95 USDA Inspection Reports, NARA Seattle.

[49] The Powell District was later transferred to the Clearwater National Forest.

[50] Howard R. Flint, District Forest Inspector, "Memorandum" September 29, 1922," Folder: Lolo 1904-1923 1 of 4, Box 11, RG 95 USDA Inspection Reports, NARA Seattle.

[51] D. L. Beatty, Nat'l Forest Examiner "Inspection Report Submitted January 4, 1923," Folder: Lolo 1904-1923 1 of 4, Box 11, RG 95 USDA Inspection Reports, NARA Seattle. This report covered portions of the old Missoula National Forest that eventually transferred to the Flathead and the Lolo forests. Beatty designed an early standard plan 14 ft. x 14 ft. log lookout building.

transferred to the Lolo), contained recommendations similar to those made by flint in 1921. For example, an inspection conducted in January of 1923 by D. L. Beatty, identified the need to establish a new lookout point to cover the Montour and Lodgepole drainages, neither of which could be seen as indicated on maps on file in the forest supervisor's office. "This is a large area and it should be seen from some point."

A few more lookout points were improved during the 1920s (mostly observation platforms, some with associated cabins), but the Lolo program began to accelerate in the 1930s. During this period, virtually all new construction used Fickes' pyramidal roof L-4 design. Construction began slowly—one in 1931 and two each in 1932 and 1933. In 1934 (the year following the establishment of the CCC), 17 new lookouts were added to established lookout points on the portion of the forest located in Mineral and Missoula counties, Montana. After this peak construction year, the number of units added included: two in 1935, three in 1936, four in 1937, three in 1938, and one each in 1939 and 1941.[52]

As late as 1936, however, decisions were still being made regarding the most suitable places to establish primary lookout points. In August of that year, R. E. Fields conducted an inspection of the Lolo Ranger District's fire control program.[53] He noted that the district had seven regular or primary lookout points and three 'overload' or secondary lookouts points. Of these, six had been improved while the remaining four were tent camps. In discussing the Mormon Peak lookout point, he indicated that a 'main point' and two 'patrol points' (A and B) had been mapped previously. Fields felt that patrol point B should be used as the main observation point because it had good visibility, while four acres of clearing was required at the main lookout point to make it fully functional. The lookout man at the main point had accomplished a considerable amount of clearing during the 1936 season. Still, only twenty percent of the country could be seen from the main point.[54]

The entry of the United States into World War II halted virtually all improvements on the Lolo National Forest. After the war, funding was slow to improve. However, like all other forests, the Lolo participated in the 1950s regional plan to update or replace deteriorated lookout buildings. Between 1952 and the mid 1960s, it added at least six new lookout structures, all on previously improved lookout points. The earliest additions, on Cougar Peak (1952) and Mineral Peak (1956), were both 1936-pattern L-4 lookouts, while those added during the 1960s mostly were built according to the R-6 flat top plan approved in 1953.[55]

While some new lookout structures were being built to replace deteriorating improvements, the rate of construction was not nearly as rapid as the rate at which lookout points were abandoned. Between the late 1940s and the mid 1960s, the Lolo destroyed about twenty-six lookouts in Missoula and Mineral counties alone.[56]

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[52] Kresek *Fire Lookouts of the Northwest*, pp 380-381.

[53] The "Lolo Ranger District" referred to by Fields included most of today's Missoula Ranger District.

[54] R. E. Fields, Forester "Fire Control" August 25, 1936. Folder: Lolo 1929-1937, Box 11, RG 95 USDA Inspection Reports, NARA Seattle. In 1938, a 1931-plan L-4 lookout house on a pole tower was erected on Mormon Peak. Kresek *Fire Lookouts of the Northwest,* 381.

[55] Kresek *Fire Lookouts of the Northwest*, pp 380-381.

[56] Ibid.

By 1967, the Lolo planned to use only twenty-six lookouts during the summer fire season.[57] Locations included: Baldy Mt., Big Hole Peak, Blue Mt., Cougar Peak, Clarks Peak, Double Arrow Mt., Driveway Peak, East Spread, Eddy Peak, Edith Peak, Falls Point, Iris Point, Landowner Peak, Mineral Peak, Morrell Mt., Mormon Peak, Pats Knob, Plateau Mt., Point 118, Priscilla Peak, Richards Peak, Sliderock Mt., Stark Mt., Thompson Peak, White Mt., and Williams Peak. While the majority of these were either 1931- or 1936 L-4 cabs, the list also included an early frame cupola-style lookout (Priscilla Peak), and four flat top lookouts built between 1952 and 1960 (Morrell Peak, Richards Peak, Stark Mt., and White Mt.).[58]

By 1992, the Lolo manned only ten lookouts during the summer fire season. Nine of these (Blue Mt., Cougar Peak, Eddy Peak, Morrell Mt., Pats Knob, Richards Peak, Stark Mt., Thompson Peak, and Williams Peak), were included among the lookouts manned in 1967. However, only Cougar Peak retained its 1936 model L-4 lookout house. All of the others, including Camels Hump (newly added to the detection plan for the season) contained flat top cabs, most built according to the R-6 plan adopted in 1953.[59]

Although the majority of Lolo National Forest's fire lookouts have been destroyed (intentionally, through benign neglect, or through natural disaster), the forest retains four L-4 lookouts—two 1931-pattern lookouts and two 1936 pattern lookouts. One is abandoned in place, while the remaining three are integrated into the forest's cabin rental program.

[57] "List of Lookouts in R 1 1967." Folder: 5100 Lookouts Historical 2 of 2, Box 45, RG95 Historical Collection, NARA Seattle. This list includes only manned units. Many lookout points had been abandoned with the improvements left in place.

[58] Kresek *Fire Lookouts of the Northwest*, 380-381.

[59] Press release dated Feb. 1992"Seventy-Two Lookouts to be Operated This Summer Down from 800 Used in 1938" Folder: Historical: Lookouts, Box 46, RG95 Historical Collection, NARA Seattle; Kresek *Lookouts of the Northwest* 1984:380-381.

F. Associated Property Types

The L-4 lookout houses nominated under this multiple property submission are associated with one of two subgroups as follows:

1931 Pattern L-4 Lookout Houses

1931-approved pyramidal hip-roofed L-4 Lookout House. Buildings in this category are 14' by 14' square, with a pyramidal hip roof. Most of these lookout 'cabs' are built on towers and surrounded by a 3' wide catwalk. Those built directly on the ground lack the catwalk. Distinctive architectural features include: the use of nine-light sliding wood window sash, drop siding on the exterior walls below the windows and sawn cedar shingle roofs. Entries contain wood panel door with four or six lights. Top hinged shutters are propped open with struts affixed directly to the exterior walls (if the house is built on the ground) or to the catwalk railings (if the house is built on a tower).

1936 Pattern L-4 Lookout Houses

The 1936 pattern L-4 Lookout House is similar to the earlier pattern in basic form and finishing materials. However, the later L-4s have four-light wood window sash; in each wall the center sash open outward casement style. This later plan also has an outrigger system of holding shutters in the open position.

Significance

L-4 Fire Lookouts on the Lolo National Forest and National Register Criteria

National Register Criterion A: Under Criterion A, an L-4 Lookout may be eligible for listing in the National Register through its association with historic themes. Applicable areas of significance for lookouts include:

Conservation: All extant L-4 Lookouts eligible for listing in the National Register are associated with the broad patterns of conservation. The lookouts represent the Forest Service management policies and the aesthetics that guided the agency's permanent improvements program. Unlike the Forest Service's front-country facilities, these physically isolated resources reflect the principals of limited development. That conservation was of primary importance to the agency was succinctly spelled out in the 1905 edition of the Forest Service Use Book in terms of actual physical conservation of the forests themselves: "Officers of the Forest Service, especially forest rangers, have no duty more important than protecting the reserves from forest fires."[60]

Politics/Government: Several Acts of Congress lead to the formation of the Forest Service, the first being the Forest Reserve Act of 1891, which allowed the set-aside and reserve of forested lands for the public interest. Passage of the Organic Administrative Act in 1897 stipulated that the purpose of forest reserves was to protect watersheds and lands that were chiefly valuable for sustained timber production. The 1905 Transfer Act moved management of the forest reserves to the Bureau of Forestry within the Department of Agriculture from the General Land Office under the Department of the Interior; within five months, the Bureau of Forestry was formally renamed the U. S. Forest Service. Protection, along with administration, and development proved the

[60] United States Department of Agriculture, Forest Service, *The Use of the National Forest Reserves: Regulations and Instructions* (Washington: Government Printing Office, 1905). The Use Book was a pocket sized guide containing a summary of forest service regulations designed to be used by agency employees and by the public

mission of Forest Service through much of its history. Protection assumed a large piece of the agency's mission; however, it wasn't unit the 1930s that a standardized lookout plan was finally developed and implemented in the Lolo National Forest and the larger Region One.

National Register Criterion B: Under Criterion B, an L-4 Lookout may be eligible for the National Register if a historically significant person directly relates to the building. Although the L-4 Lookouts that remain in the Lolo National Forest represent the standardized designs of Clyde Fickes, properties significant as a result of an architect's design or engineer's skill are generally found eligible under Criterion C.

National Register Criterion C: Under Criterion C, an L-4 Lookout may be eligible for the National Register if it embodies the "distinctive characteristics of a type, period, or method of construction, or represents the work of a master, possess high artistic value or represents a significant and distinguishable entity whose components lack individual distinction." Applicable areas of significance for this criterion include architecture and engineering.

The development of the "readicut" L-4 lookout house was instrumental in Region 1's successful completion of its system of ground- or fixed-point fire detection. L-4 "kits" solved several problems one of which was logistics. Kits arrived in bundles ready to be loaded onto mules for transport to remote lookout sites. Once on site, the buildings could be erected quickly, by people with limited carpentry experience, using just a few simple tools. After adoption of this standardized plan, the forests in Region 1, including the Lolo National Forest, were able to complete their fire detection or "presuppression" systems fairly rapidly with limited funding.

***Registration Requirements*:** Significant dates associated with L-4 Lookouts listed under this MPD must fall within the period of significance defined in this document, 1932-1967.

National Register Criterion A: A L-4 Lookout may be eligible for listing in the National Register of Historic Places under Criterion A if it meets one or more of the following criteria.

1) Associated with Forest Service management policies and its attempts to preserve and manage the natural resources of the Lolo National Forest. The L-4 lookouts on the Lolo National Forest are a physical reminder of the agency's early conservation attempts to manage and protect the areas under their supervision from the devastating effects of wildfire. Although literally hundreds of these types of lookouts were constructed beginning in the 1930s in the Lolo National Forest, intentional demolition, neglect, and destruction from wildfire has resulted in a staggering loss of the one-time ubiquitous property type.
2) Associated with the Forest Service's attempt at forest protection through detection. Fire protection measures always played a large role in the history of the Forest Service. Attempts at greater fire protection occurred soon after the great fire of 1910. By 1916, the Region One acting forester detailed the region's forest policy regarding the establishment, development and maintenance of lookout points. The standardized lookout designs of Clyde Fickes in 1928, followed by the updated and approved pyramidal roof L-4 in 1931, set the Lolo National Forest, and greater Region One, on an accelerated course of fire protection through improved detection, one of the important missions of the agency, associated with the earliest Acts that gave rise to the Forest Service.

National Register Criterion C: A L-4 Lookout may be eligible for listing in the National Register of Historic Places under Criterion C if it meets one or more of the following criteria.

1) Associated with the original, and later modified, standardized plans of Clyde Fickes. The standardization of lookouts in the early 1930s moved the Lolo National Forest, and greater Region One,

toward significantly improved fire protection capabilities in terms of detection. The standardized plans of Fickes allowed for a construction of a durable and inexpensive lookout that could be assembled in the field by forest service employees with limited construction skills.

Integrity

Design, Materials, Workmanship: Eligible L-4 Lookouts must retain the majority their character-defining cab-related construction features and be identifiable as to its unique property type (i.e. as 1931 or 1936-edition lookout houses). Decades of use in an inhospitable environment necessitates maintenance of some of the wooden components. Changes made historically or restoratively done with materials similar in composition, design, and workmanship retain the historic character of the lookout and do not affect its integrity. As the towers that support the cabs are fundamentally important to the use and safety of the lookouts, changes to these may occur without negatively affecting the overall integrity of the lookout. Ancillary structures such as outhouses may be replaced or removed without eliminating a property from eligibility.

Location, Setting, Feeling, and Association: Lookouts must remain in their original location. In addition, lookout cabs originally supported by towers must remain so; a cab removed from its tower and placed on the ground would be considered not eligible for listing in the National Register. As lookouts occur in remote areas, integrity of location strongly indicates that integrity of setting, feeling, and association would also remain strong,

G. Geographical Data

The geographical area covered by this multiple property submission includes ground-detection lookout points located on federal lands administered by the Lolo National Forest, three in Missoula County and one in Sanders County. The fact that the majority of the lookouts are located within Missoula County is coincidental. L-4 lookouts were once ubiquitous on Lolo National Forest lands in Missoula, Mineral, and Sanders County.

H. Summary of Identification and Evaluation Methods

The fire lookouts included in this MDP represent the only remaining L-4-style lookouts on the Lolo National Forest. A 1984 effort to obtain determinations of eligibility for all varieties of lookouts on the Lolo and Bitterroot national forests identified eight L-4 lookouts on the Lolo National Forest that were 50 years old or older. Since that time six have been removed from the landscape. Causes include: demolition by neglect, destruction by wildfire, and replacement with new structures.[61]

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[61] Note that the 1984 effort listed Mineral Mt. (a.k.a.) Mineral Peak Lookout as a post- 1942 flat roof cinderblock building. Although it does post-date 1942, it is simply the later, 1936 version of the L-4 Lookout House.

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